

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

- 1    1. **(Currently amended)** A method of forming a ceramic body with nanostructures on at  
2    least one surface thereof, the method comprising:
  - 3            (a) compressing ceramic particulate at a pressure sufficient to form a solid body;
  - 4            (b) sintering the solid body at a temperature and for a period sufficient to bond the  
5            particulate in the solid body into one or more ceramic crystals; and
  - 6            (c) exposing the sintered solid body to a reducing environment at a temperature  
7            ~~substantially greater than 105 of~~ about 700 degrees Fahrenheit Celsius and for a  
8            period sufficient to form nanostructures on at least a portion of the exterior  
9            surface of the solid body.
- 1    2. **(Original)** The method in accordance with claim 1, wherein the ceramic particulate  
2    further comprises titania.
- 1    3. **(Original)** The method in accordance with claim 1, wherein the reducing environment  
2    further comprises a hydrogen-containing gas flowing over the solid body at a sufficient  
3    gas flow rate to form said nanostructures.

1 4. **(Original)** The method in accordance with claim 1, wherein said pressure is greater  
2 than about 0 MPa.

1 5. **(Original)** The method in accordance with claim 1, wherein said pressure is about 400  
2 MPa.

1 6. **(Original)** The method in accordance with claim 1, wherein the step of sintering is  
2 carried out at a temperature of less than 1,400 degrees Celsius.

1 7. **(Original)** The method in accordance with claim 6, wherein the step of sintering is  
2 carried out at a temperature of about 1,200 degrees Celsius.

1 8. **(Original)** The method in accordance with claim 7, wherein the step of sintering is  
2 carried out for about 6 hours.

1 9. **(Original)** The method in accordance with claim 3, wherein the hydrogen-containing  
2 gas further comprises a majority inert gas and a minority hydrogen-containing gas.

1 10. **(Original)** The method in accordance with claim 9, wherein the hydrogen-containing  
2 gas is hydrogen.

1 11. **(Original)** The method in accordance with claim 9, wherein the hydrogen-containing  
2 gas is water.

1 12. **(Cancelled)**

1 13. **(Currently amended)** The method in accordance with claim ~~9~~<sup>12</sup>, wherein the step  
2 of exposing is carried out for a period of about 8 hours.

1 14. **(Previously presented)** The method in accordance with claim 3, wherein the step of  
2 exposing is carried out at a hydrogen-containing gas flow rate between about 100 and  
3 about 500 milliliters per minute.

1 15. **(Original)** The method in accordance with claim 14, wherein the flow rate is at least  
2 about 500 milliliters per minute.

1 16. **(Original)** The method in accordance with claim 1, wherein the nanostructures  
2 formed further comprise nanofibers.

1 17. **(Cancelled)**

1 18. **(Currently amended)** A method of forming a metal oxide body with nanostructures  
2 on at least one surface thereof, the method comprising:

3 (a) compressing metal oxide particulate at a pressure greater than 0 MPa to form a  
4 solid body;  
5 (b) sintering the solid body in air at a temperature of less than 1,400 degrees  
6 Celsius; and then  
7 (c) heat treating the sintered solid body in a gas mixture containing a majority of  
8 an inert gas and a minority of a hydrogen-containing gas at a temperature of about  
9 700 ~~substantially greater than 105~~ degrees Celsius~~Fahrenheit~~ and at a gas flow  
10 rate and for a period sufficient to cause nanostructures to form on at least a  
11 portion of the exterior surface of the solid body.

1 19. **(Original)** The method in accordance with claim 18, wherein the nanostructures  
2 formed further comprise nanofibers.

1 20. **(Original)** The method in accordance with claim 18, wherein said pressure is about  
2 400 MPa.

1 21. **(Original)** The method in accordance with claim 18, wherein the step of sintering is  
2 carried out at a temperature of about 1,200 degrees Celsius.

1 22. **(Original)** The method in accordance with claim 21, wherein the step of sintering is  
2 carried out for about 6 hours.

1 23. **(Original)** The method in accordance with claim 18, wherein the inert gas is  
2 nitrogen.

1 24. **(Original)** The method in accordance with claim 18, wherein the hydrogen-  
2 containing gas is hydrogen.

1 25. **(Original)** The method in accordance with claim 18, wherein the hydrogen-  
2 containing gas is water.

1 26. **(Original)** The method in accordance with claim 18, wherein said gas flow rate is  
2 between about 100 and about 500 milliliters per minute.

1 27. **(Original)** The method in accordance with claim 26, wherein the gas flow rate is at  
2 least about 500 milliliters per minute.

1 28. **(Cancelled)**

1 29. **(Currently amended)** The method in accordance with claim 18~~28~~, wherein the step  
2 of heat treating is carried out for a period of about 8 hours.

1 30. **(Cancelled)**

1 31. **(Currently amended)** A method of forming a titania body with nanofibers on at least  
2 one surface thereof, the method comprising:  
3 (a) compressing titania particulate at a pressure of about 400 MPa to form a solid  
4 body;  
5 (b) sintering the solid body in air at a temperature between about 1,100 and about  
6 1,400 degrees Celsius for about 6 hours; and then  
7 (c) heat treating the sintered solid body in gas containing about 95 percent inert  
8 gas and about 5 percent hydrogen with a gas flow rate between about 100 and  
9 about 500 milliliters per minute and a gas temperature of about 700 degrees  
10 Celsius.

1 32. **(Original)** The method in accordance with claim 31, wherein the step of sintering is  
2 carried out at a temperature of about 1,200 degrees Celsius.

1 33. **(Original)** The method in accordance with claim 31, wherein the flow rate is at least  
2 about 500 milliliters per minute.

1 Claims 34-39 **Cancelled**